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Contemporary Idealism in America

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WORKING concertedly, according to a previously prepared plan, twelve modern idealistic philosophers here attempt to allay the widespread confusion which exists as to the general position of Idealism at the present time. Their composite work is neither defense nor propaganda—rather the presentation of a view of issues fundamental in contemporary thought. Simple and clear enough in treatment for use in college and university classes, this work will also be of marked interest and value to mature thinkers. The rostrum of authors alone is guarantee of its quality.

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THE JOURNAL OF PHILOSOPHY

REASON AS FACT AND AS FETICH (II)[1]

13. Reason, the argument sums itself up, must be either the name for a pattern of action which discharges a vital function for a biological organism, or a parasite upon that organism, sustained by its strength and doomed with its destruction. In the latter case, the fullest flowering of Reason would concur with the complete reduction of the organism to nothing. If the vision of "truth" be that flowering, the attainment of the vision would be the annihilation of the seer. This is not, however, the belief even of those thinkers to whom Reason is somehow a more than natural power of the psyche. For them, also, Reason is functional and, with "truth," more valuable in what it performs than in what it presents. Suppose that these supernaturalists do put Reason at the last dialectical stand of staticism. Suppose that they do talk about it as man's unchanging vision of the changefulness of change. What have they gained? They acknowledge it as a vision, and they acknowledge it as a human vision. This acknowledgment is the very least they can make if Reason is to be a subject of discourse at all. But in making the acknowledgment, they also accept Reason as an event among other events, with a beginning, a history, and an end, responding and being responded to among the occurrences in which it is itself an occurrence. But as such an event, the validity of Reason is no more inevitable and no less contingent, no more detachable from its consequences than the form of the horse's toe which is one reduced from five, or a whale's vestigial feet, or a man's vermiform appendix. The present phase of each of these organs, or of any other, is the moment of its function and effect in the life-history of the organism whose organ it is or was. And which organ shall prosper and which is doomed is not predestination but luck and pluck. To say more than so much of Reason would be to seek rationality at the expense of reasonableness; it would be wishful thinking, an exercise of faith, not to listen soberly the deliverance of experience.

David Hume observed this in the very heyday of the Age of Reason:

> To consider the matter aright [he said], reason is nothing but a wonderful and unintelligible *instinct* in our souls, which carries us along a certain train of

[1] Continued from preceding issue No. 21.

ideas, and endows them with particular qualities, according to their particular situations and relations. This instinct, 'tis true, arises from past observation and experience; but can anyone give the ultimate reason why past experience and observation produce such an effect, any more than why nature alone shou'd produce it? Nature may certainly produce whatever can arise from habit: Nay, habit is nothing but one of the principles of nature, and derives all its force from that origin.

And what involves beginnings and endings, if not habit?

In sum, rationality is a fortuitous relationship which has established itself as an habitual equilibrium. An adjustment mediated by symbols and not an insight (save into symbols), what chiefly characterizes Reason is not objective reference, but inner mood. We enjoy, in William James's apt phrase, a *sentiment* of rationality. This sentiment, he tells us, defines itself directly as a strong feeling of ease, peace, rest. It is the moment of an accomplished transition from perplexity, doubt, and puzzlement to assurance and to certainty. Lively relief enters into it, no less than peace, and it distinguishes itself from other moods with the same components by a kind of reference to the doubt and confusion just overcome. The absence of those is its criterion; rationality being thus "a feeling of the sufficiency of the present moment, of its absoluteness—this absence of all need to explain or account for it or justify it." This is why *anything* that we may think with perfect fluency becomes identified as rational: the familiar, the customary, whatever banishes uncertainty from the future, whatever defines expectancy, whatever *closes* the prospect. Such things at least mitigate, and, at most, dissolve, change, novelty, individuality, and conflict, by subordinating them to a single formula or rule. "Anything," however, means nothing special. It is a portmanteau word. Objects which satisfy the sentiment of rationality begin to do so accidentally and contingently, and do so necessarily simply by continuing in the chance rôle. For necessity is but chance repeating itself as habit. Things rationalized thereby are events of adjustment in the fortunes of a man's life or a community's history.

This adjustment need no more resemble the terms involved than a knife need resemble the bread it slices or a bottle the liquor it shelters. When it happens, whether *instanter* or in the course of time, its object gains a warmth, an intimacy that assimilates it to the inwardness of thought; we feel at home with it; we call it "self-evident." But, as recent events in mathematics sufficiently show, "self-evidence" may lapse at any time. A strangeness may overspread any and every rational thing, doubt set in anew, with all its perplexities and conflicts. Then the thing forfeits its rationality to some other thing which has ousted it from its place. Yet the now irrational object need not have lost any of its logical characteristics

or dialectical necessity. These may still endure. But having become incongruous with the passions and purposes of the man or society that had found peace in them, rationality departs from them. The fortunes of God at any time, but especially since the rise of the Newtonian meaning of Reason, tell the tale. . . .

14. So much for Reason in the Darwinian meaning of the term. While this was coming to fulness and maturity, the sciences of nonliving matter were developing by leaps and bounds; and so with a certain parallelism, but far more rapidly and independently, were the mathematical sciences. The conflict and coöperation of mathematicians over each other's works produced a wonderful expansion of the field as an autonomous domain of Reason, while at the same time the requirements by the experimental sciences of mathematical materials and techniques grew in volume and refinement. How competent, to those inured to the discipline, mathematical form is to satisfy the sentiment of rationality, is an old story that dates from Pythagoras. Could, then, the urge to subdue the manifold and perplexing flux of experience to the unified and clear certainties of mathematical equation fail to push on the troubled heart? The record tells of recurrent attempts to restate the sciences and the arts in mathematical language and mathematical procedures. From Galileo's day on, the endeavor proceeded with increasing momentum and success that came, toward the end of the nineteenth century, into a new prosperity. The matrix of this prosperity was the invention of a new domain, a promising no-man's-land where logic and mathematics meet. A new discipline took shape, analogous to biophysics or physical chemistry. It was the discipline of mathematical logic, also called symbolic logic and logistics. What seems most to have set it up was the fabrication and working out of a new system of signs, still strange and still remote even from the most long-suffering and the most abstract of professional philosophers.

These signs were arbitrarily made significant of other signs and were employed to break up the terms of the mathematical and physical sciences into the simplest and fewest elements—terms and relations—possible, and then to build up these sciences in logistical structures as parsimoniously and rigorously as might be. Such craftsmen as Peano, Frege, Whitehead, Russell, among others, contributed variously to the initial stages of the enterprise—Peano invented many of the signs; Russell and Whitehead the logistical restatement of mathematics and physics in a hierarchy of equations expanding like an inverted pyramid from simple to complex. Since the turn of the century, the enterprise has recruited many workers and been acknowledged as a respectable discipline by place in academic curricula. There is an ambition among the cognoscenti to re-

state all the languages of the life of reason in the language of mathematical logic. They exhibit a mystical faith in it as the *dernier cri* of scientific thinking. To them nothing can be "really" logical except in this mode, with its symbols of symbols of symbols for tools, its mathematical anatomy and its far remove from the teeming data and events whence its symbols ultimately derive. These traits impart to the discipline a formality and rigor which can be paralleled only by the logic of scholasticism. Its advocates, indeed, aspire to be to the sciences what the scholastics had been to medieval theology, only more so. They look toward a Thomas-like *Summa*. I suspect that the enthusiasm for this discipline is due to a natural enough confusion of difficulty with competency. The feel of the difficulty overcome deepens the sentiment of rationality. The fascination of Hegelism and of chess owns a similar ground in the psyche. The other source of enthusiasm seems to lie in the equally natural confusion of symbolistic ritual, become fluent through habituation, with successful reasoning. Executed "decently and in order," those things, as ecclesiastics and metaphysicians know, have an air.

In their superlative estimation of mathematics, however, these twentieth-century scholastics are responsive to a crucial factor in the progress of the sciences of matter. This progress is largely due to the improvement of the techniques of measurement. The techniques again are processes run through by machines. And the machines, once started, go automatically. They leave little or nothing for the experimenter or investigator to do. He just stands by, a spectator at the show, an embodied Pure Reason beholding Eternal Truth manifest itself. As Industry, operating in factories with great automatic machines, offers what it produces to the ultimate consumer with the slogan, "untouched by the human hand," so Science appears by way of offering what it produces to the ultimate consumer with the slogan "untouched by the human mind."

Because of machineries of measurement there prevails in these days the widespread illusion that the upshot of an experiment or a statistical manipulation is a "fact" revealed, not an event transformed. And when such a "fact" is stated, not in the language of the daily life, but in the remote, attenuated equations of mathematical form, there accrues to it an aura of inevitability, of necessity, which imposes. The "fact" and its relations are set forth as the revelation of the hidden eternal structure of the world without; and by the revealing act Reason seems to be once more restored to the hegemony over the propulsions of the psyche which it had been endowed with from the beginning. The event is however esthetic, not intellectual, of the same kind as the garb of ecclesiastics, warriors, policemen, and courtesans. As that prince cardinal among

logisticians, Bertrand Russell himself, says somewhere: "Logic liberates the imagination as to what may be; it refuses to legislate as to what the world is."

15. The Great War did something violent to the structure of contemporary society. The process and new direction of continuous social change brought in during the Age of Reason by the industrial revolution has been disrupted. The compenetrations of old and new are less complete. Folkways and establishments stick out like fractures, self-revealing. The conventions of our thinking, our canons of knowledge and belief are also in disruption, nor has the excitement occasioned by Freud and by Einstein diminished the new confusion. Reason has not been able to profit by the event. Each one of its major meanings, here reviewed, belongs with one or another institutional system, one or another more or less mighty vested interest sustaining a precarious balance of power in an enduring struggle for dominion and prestige. Religion, science; church, state; class, mass; capitalist, socialist; worker, gentleman; bourgeois, artist; their ranks and their divisions—each makes its special meaning of Reason. Each opposes its own to the others, with which it nevertheless compenetrates without coinciding in the relentless give and take that is the life of all.

But between the species and varieties of the Aristotelian, Newtonian, and logistical meanings of Reason a certain coöperation is easy which they can not accomplish with the evolutionary or functional. For they join hands in support of universals and eternity, of a necessary order in the nature of things, whether gods or ghosts or gorillas enter into that order, whether matter or spirit, and whatever relations these entrants may bear to one another. The functional view finds no such order. It acquiesces in the changes and chances of the stream of life. It takes account of the special reference which human needs and human vision must have because they *are* human and not everything else in addition. It acknowledges both the compulsion exercised by the changing environment upon the needs and vision, and the frame of humanizing perspectives in which the latter set the former. The functionalists prefer to keep thought relevant to the time, the place, and the circumstances of thinking. To them, reason, meaning, is, like motion in the theory of relativity, a local event specific to a limited frame of things. They are more modest in their pretensions and more sober in their claims than the eternalists.

But the eternalists insist that the functionalists must be wrong since the arguments against the eternalist meaning of Reason presume the logical necessities they argue against. How what is presumed must be "necessary" deponent saith not. Necessary or not,

presumed or imposed, "logical necessities" are themselves beyond proof. If they impose themselves, it is by *force majeure*. Thinking goes on also in other ways than the linguistic modes they give a name to, and there are other meanings to Reason, as we have well seen. The irreducible conflict of these meanings is sufficient to establish that the championing of one or another is an act of faith; if you will, of animal faith. This imparts to Reason its dynamic and establishes it as the favored child in the home of human life. The favored child because the faithful servant. Faith is here the surd in rationality.

16. The philosophic tradition has been far from unaware of these conflicts and inconsistencies in the heart of the Reason whose central aspiration is consistency. It tells now and again of one logician or another who has sought to establish rationality in Reason by making a distinction. "Understanding" has been invented to supplement Pure Reason; Practical Reason to perform what Pure Reason could not; "Action" to divide the realm of experience with Theory, that Pure Reason should in the end rule both. Thus might due reverence be paid to the working life of thought while the otiose rationality, the securities and certainties of an eternal and universal logical order, are kept undiminished and intact.

The present-day terms of the division are "Logic" and "Psychology," mathematical definition of rational structures and behavior consisting in adjustive and controlling responses to congeries of successive events. To Reason has been attributed "suspended judgment," attendance upon the "weight of evidence": to psychology that irrational determination which goes with the absence of those attitudes, an absence upon which the conduct of affairs and the practice of business and the professions seems conditioned, if civilization is to be a going concern. For the procession of the evidence regarding any matter is interminable and judgment could stay suspended forever. But soon or late the procession is cut off, decision is made. There is nothing in the nature of the evidence itself that cuts it off. The psyche does that, and according to the interests which are concerned about the evidence, lets loose the judgment. As often as not, the same evidence weighs more heavily now in one, now in the other, of two opposite directions. The law provides us with innumerable instances of this sort, and it is an open secret how the scale is tipped by such imponderables as the skill of the advocate, the will-to-believe of judge and jury. The Sacco-Vanzetti case is an outstanding contemporary instance, but the story of any reversed decision re-enforces the observation.

If I speak first of the law, it is because concerning this institution, next to the sciences, there prevails a conventional lie concerning the "weight of the evidence," judicial impartiality, and the imperative-

ness of strict and rigorous thinking. But the situation obtains wherever human beings reason. One need recall only such events as the disputes as that over the guilt of the Germans for the Great War; the crusade of Catholic Truth Society to vindicate "Catholic Truth" against other kinds, the controversies which characterize all the sciences, including mathematics, and are essential to their procedure. So far as I can see logical technique can be identified and abstracted only in discourse from its organic context in the activities of the psyche. That is, it can, like everything else, be symbolized by words. But as an actual component of the events of reasoning it can no more be cut off from the residual psychological processes with which it interfuses than can the movements of the limbs from the activities of the brain and the endocrine system.

Thus, it is no more possible to segregate "scientific method" from "psychological activity" than the techniques of any other, "practical," walk of life. The psyche even when split works as a whole, whatever its field. Those who declare that it does not, and point to the customary division between "theory" (where things show themselves in Reason's "cold dry light") and "practice" (where they heat up the will and the passions), are unconsciously attributing to the psyche the traits of a special field of its action.

Consider the field of the sciences. That part of it which is not plant, machinery, and tangible stuffs to put through the machinery, is language and computation. The whole assemblage is focussed at some particular theory, dogma, event, which a particular man or company loves enough to endeavor to establish and maintain or hates enough to seek to overthrow and demolish. To gratify the feeling, the assemblage is organized in a dynamic system which takes up some stuff, manipulates, tranforms, and measures it, and sends it out in the form of neat equations, as manufactured goods are sent out done up in orderly packages. In the field of mathematics, again, the stuffs and machines of the physicist, chemist, and biologist are lacking: it is a field composed of symbols only, and the mathematician's skills are more like the pre-industrial craftsman's or artist's than the industrial worker's. Though machinery can perform many of his operations, his art remains still a "mystery," as the scientist's does not. The same thing in perhaps a greater degree applies to the logician. The stuff with which these craftsmen work is symbols, language purely. Beside the materials and tools used by scientists and business men, they look so tenuous as to feel imponderable.

This is the reason, and the sole reason, for distinguishing the manipulation of these from those as "theory" from "practice." Not because one is contemplative, the other active; one detached, the other enjoying all the passions that move mankind. The lives of

mathematicians and logicians and scientists declare otherwise. Health, disease, love, hate, jealousy, emulation, hope, fear, and indigestion enter into the processes of rigorous logic no less and no more than into the rest of life. And *vice versa*. Logicians themselves sometimes realize this. So F. H. Bradley, one of the greatest of them, testifies: "In my actual reasonings I, myself, certainly have never troubled myself about any logic." He confirmed an attitude which the great David Hume himself advocates. "Where Reason is lively," Hume declares, "and mixes itself with some propensity, it ought to be assented to. Where it does not, it never can have any title to operate upon us." One might add, "nor any power." For without the intervention of preference, the parity of systems is the whole lesson of Pure Reason. Buridan shows this with his heroic logical Ass. Kant shows this by his array of *Antinomies*, and to Hume it was so explicit that the one and only remedy that he could offer against scepticism, which he called a malady, was "carelessness and inattention." In contemporary speech, the remedy is to let oneself live, to let propensity have sway, to take up the options experience presents, to decide, to choose. Mr. Santayana says, defer to animal faith.

17. In view of these considerations, what more can be said to account for the honorific position of Pure Reason? I am inclined to the opinion that it is a survival, retaining, like royalty in England, an esthetic hold upon the psyche. The assurance which the psyche draws from its formal ultimacies is undoubtedly an operative cause, but it blesses too limited a section of the population to be a sufficient one. The adequate cause is to be discerned in the honor and dignity pertaining to the privileged classes among whom its practice started and has been largely continued. The bias of professional logicians and philosophers who, following the emulative precedent set by Plato and Aristotle, glorify their own trade, is natural enough and may be discounted. But the professional practitioners of Pure Reason were pensioners upon the bounty of the rich and great, and practiced it for their edification and entertainment. The rich and great practised it not for a living, but because they could afford to, because they were at leisure. Till the middle of the eighteenth century it was their exclusive prerogative, an honorific and to-be-envied diversion of the leisure class, like game-hunting, fighting, and love-as-a-fine-art. Pure Reason, in a word, was honorific because it was one of the ways in which the more honorable classes of mankind—churchmen, landlords, and other receivers of free income—passed the time. Sure of far more than bread and bed, their curiosity could be "idle," their reason "pure and cold"; they could contemplate God, argue about universals, play at chess or cards, and otherwise practise

rigorous logical thinking. That not many used this way of passing the time with the distinction of the professionals they supported is true. But are there ever many who can compass a distinguished exploitation of a way of passing the time?

Where Pure Reason ceases to be a prerogative of the leisure class, it ceases to be pure—and thereupon ceased to be sterile. Its conceptions, being maculate, are fruitful. One need only inspect the often-mentioned intimacy between the sciences and industry. This has brought Reason down into the mud and rubble of the workaday life. It thrusts into the foreground the living scene that calls forth the activities designated by the "laws of thought." Amid these actualities the laws establish themselves in no way as principles of the eternal structure of the nature of things, in every way as tools and stratagems of the heart of man, trying to maintain his life amid those things. Already Heraclitus, already Hegel, had taken note of the fluidity and contradiction at the very heart of the things: Heraclitus had sought to overcome it with the Logos and made of change a circle ever-returning on itself; Hegel had endeavored to do it by identifying the contradictories, and raising the flux into the principle of its own rationality. Neither device was adequate to manipulate and control the actualities it envisaged. These are, as William James says:

> given to each of us in an order so foreign to our subjective interests that we can hardly by an effort of the imagination picture to ourselves what it is like. We have to break that order altogether,—and by picking out from it the items which concern us, and connecting them with others far away, which we say "belong" with them, we are able to make out definite threads of sequence and tendency; to foresee particular liabilities and get ready for them; and to enjoy simplicity and harmony in place of what was chaos. . . . It is an order with which we have nothing to do but to get away from it as fast as possible. As I said, we break it into histories, and we break it into arts, and we break it into sciences; and then we begin to feel at home. We make ten thousand separate serial orders of it, and on any one of these we react as though the others did not exist. We discover among its various parts relations that were never given to sense at all, and out of an infinite number of these we call certain ones essential and lawgiving, and ignore the rest. Essential these relations are, but only *for our purpose*, the other relations being just as real and present as they; and our purpose is to *conceive simply* and to *foresee*. Are not simple conception and prevision subjective ends pure and simple? They are the ends of what we call science.

This "breaking" of the natural order, this linking of the remote and separation of the near, this terminal "simplicity and harmony," this making of these arts and sciences, are accomplished however by the techniques we call laws of thought. They are not descriptions of the world, they are methods to alter it. If things were as they say things are, the saying never could have been pronounced. If

identity were not constantly challenged, attacked, and lapsing; if, as Hegel says, everything were not at the same time its own other, no law would have arisen to affirm identity. If being were not a transition, if things were existentially complete, and not either coming to be from something else, or dying away into something else, no law would have been called for to deny the unity of being with non-being and to hold fast to the preferred being. . . . If the middle that the law of excluded middle excludes were not continuously bobbing up in the stream of experience, how could such a law have any meaning whatever? What sense, to exclude that which does not intrude?

Actually, we nowhere, not even in logic or mathematics, encounter an unambiguous identity, a this-and-no-other. We always think by selecting from a compenetration of thises, by identifying, by drawing out, by clinging to; by strengthening, by confirming, by validating the precarious This, by repelling the inexorably invading Other. The activities which these expressions name are passionate when they occur. But they constitute the anatomy of all reasoning, with its evidence and proof, its inference, its refutation of alternatives and objections. The "laws of thought" sum them up. Far from presenting themselves as the principles of the rational structure of reality, they present themselves as devices by whose means a structure is set up, within reality, determined to some humanly important center of reference. For experience knows no identities; it knows only identifications. Everything both is and is not; everything becomes and ceases. The psyche's aspiration goes out in an endeavor to set up fixities within the flux, to preserve those made identities, to keep on the upper side of the precarious equilibrium of life. The psyche's best achievement is a top-like motion which presents an illusion of standing still at last and is called consistency. What are all our cultures but diversifications of that central impulsion, foredoomed modes of overcoming the flux, changing even as they labor against change?

Foredoomed. Because the flux is not to be overcome. If it were, mankind would have no history, the present no future. On this account, the trend of those modes of experience I have been calling Pure Reason is a hopeless one. For it is compelled forever to return upon itself, and imagines, so returning, that it has found eternity. The Reason at work in the life of reason is more reasonable. It acknowledges that rationality can never be a predicate of all things, or even of many human things. It recognizes that everywhere a *more* always sticks out, an *other* always intrudes; that there is a warfare to man upon earth, and to the earth itself. It works for peace without victory; its ways are all toward compromise and adjustment; its proceeds, because it can not otherwise, by subduing

the laws of thought to the maxim of "live and let live." It is significant that the English usage of our time makes synonyms of "be reasonable" and "have a heart." To be reasonable or to have a heart is to forego consistency and acquiesce in tolerance; to acknowledge the pervasive mingling and clash of identities which is the soul of contradiction; to accept the excluded middle as at home in the very center of the inner shrine. To be reasonable or to have a heart is to recognize how reality is everything which the laws of thought preclude; how the laws of thought are special ways of life which reality in the end obliterates.

The notation of this conflict at the very core of the psyche may well conclude this essay.

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A NOTATION ON THE PROBLEM OF THE PAST—WITH ESPECIAL REFERENCE TO GEORGE HERBERT MEAD

THE past has just recently come to the front as a problem. Upon some of its metaphysical and epistemological aspects such writers as Holt, Laird, Russell, Alexander, Whitehead, Broad, and Burtt have touched, while the Dewey-Lovejoy controversy accentuated certain logical considerations. More recently the late Professor George Herbert Mead in two public utterances brought his unique analytical procedure to bear upon it, which resulted in a more fully developed statement than hitherto expressed by philosophical contributors. Within a limited space I wish to sketch just one of the considerations to which this problem is entitled in the interest of better intellectual treatment and destiny.

Mead devoted a considerable portion of the Paul Carus Foundation Lectures[1] to the nature, the form, and the function of the past. In this statement the nature of the past is that of the conditioning of the present; the form of the past is that of a cognitive structure in the present; and the function of the past is that of a "chronicle" which is seen to lead up to, and thus explain, the present. Mead's conception of the form of the past furnishes the approach to this article. His contention was that the only past with which we are conversant is that of our cognition. This past is not a static metaphysical structure of such events as are said to have happened; for this structure, if it exist, we are unable to reach with our present equipment, and it has, therefore, no reality to us. Our past, any past of which we can conceive, is a construction of intelligence; this construction derives its characters from the present in which intelli-

[1] *The Philosophy of the Present*, Chicago, Open Court Publishing Co. 1932.

gence is operative, and in these characters is projected out from the present. The present features variations and changes, as successive situations are unfolded; and the variations are reflected in corresponding changes in the form of the accompanying past. The variations which our pasts undergo are in accordance with our individual development, our increasing historical insight, and our advancing scientific achievements.

This phase of Mead's treatment of the problem of the past brings into view a distinction which I am urging, not from sheer love for philosophical distinctions, but because the failure to make it up to the present time seems to be responsible for much inadequate thinking with reference to this problem. The distinction to which I refer is that simple one between the metaphysical and the epistemological aspects of the problem; and the simplicity of the distinction makes it all the more urgent. In such writers as Alexander and Broad matters identified with these aspects are under discussion; nevertheless, the distinction seems to be disregarded, with the consequence that the outcome is less clear.

From the standpoint of the problem of the past the distinction may be urged somewhat as follows. The metaphysical aspect of the problem directs attention to the reality, if any, which can be ascribed to the past *as existence,* while the epistemological aspect presents the reality of the past *as* a means or field of *orientation.* The answer to the question, can both of these realities be predicated of the past, rests importantly upon the view of reality entertained by the individual thinker who seeks the answer; a tentative working definition is, therefore, desirable. Reluctantly hazarding the appearance of presumptuousness, I suggest a workable definition: Reality is that which functions in a reference system, including the system itself. This tentative definition does not equate reality with existence; it merely ascribes reality to the various reference systems and their functioning factors within the realm of existence. Each system features its own realities; but the realities of, say, an electro-magnetic system are not the realities of a chemical, a biological, or a logical system. A given particle of existence may relate various systems by being a part of each; but its reality in each of the systems differs with and is determined by the system in question; and as thus considered the various realities of the given existential particle do not overlap but remain distinct in each system. In the logical system of tables and not-tables, the logical reality of not-table is not the domestic reality of a comfortable chair; the realities are distinct, though they are aspects of what we may regard as one spatio-temporal occupation. Now, the genius of the metaphysical system is the actuality and structure of existence, and its realities are determined in these terms; the genius of the epistemological system

is the possibility, implications, methods, and consequences of conscious orientation, and accordingly the realities of this system are determined by the characters of such orientation.

I

We may begin our brief consideration of the metaphysical aspect of the problem of the past by quoting the following propositions from the opening sentences of Mead's Carus Lectures: "Reality exists in a present. The present, of course, implies a past and a future, and to these both we deny existence." Mead regarded existence as fundamental to any category of reality, including the metaphysical; the just-quoted propositions, thus, deprive the past of its metaphysical reality.

Mead was not the first thinker to whom this denial had occurred. Early in the modern period Hobbes maintained that the present *alone* has "being in nature," and that the past has being only in memory.[2] The latter half of the last century found Lotze suggesting that the only point of reality of time is the present, while the past is "an endless but imaginary arm."[3] More recently Laird has asserted that "the past does not exist now";[4] and with a slightly different twist Alexander would have it that "the past event . . . does not exist now," though its reality "is to have existed then."[5] But there are thinkers of an opposite tendency, among whom may be mentioned Holt, whose "metaphysical manifold" consists, in part, of the actual facts or events at the point where they are intersected by "the recalling consciousness";[6] here the intersecting past events and present consciousness are realities, each of its own kind. But the outstanding contention for a metaphysical reality of the past is probably that of Broad, for whom the happening event never ceases to exist.[7]

The position presented in the above-mentioned Carus Lectures may be epitomized as follows. Reality is found in the natural process. The focus of this process, that is, the point at which nature displays its processional character, is the happening events where characters emerge and active existences continue or break. This field of emergent events is the present; the structure of the present is the emergent events, and this structure is basic to time itself. Thus, by this definition, the present becomes the seat of reality. Now, if reality is identified with the process of nature, and if the actuality

[2] *Leviathan*, Part I, Chapter 3.
[3] *Metaphysics*, Section 65.
[4] *A Study in Realism*, page 50.
[5] *Space, Time, and Deity*, Volume I, page 71 (New Impression).
[6] *The Concept of Consciousness*, pages 179, 182, 233, etc.
[7] *Scientific Thought*, pages 66, 69 (Reprint of 1927).

of this process is in the active and emergent happenings, and if these happenings define the scope of the present, then, of necessity, that which is not in the present because it is not a happening because it is not in the actuality of the process, must fall outside the field of reality. The former stage of the now on-going process is no longer in activity; it has ceased to exist as process. To say that the former stage is left behind or is past means that its reality ceased when the happenings of that stage expired. The metaphysical reality of the past must, therefore, be denied. So far Mead.

The concept of time is an abstraction which has developed out of naïve racial habits of thinking; and it has continued to retain the large divisions inherent in this untutored thought, namely, the past, the present, and the future. It is obvious that the concept of time is based on realities; but upon consideration it seems equally obvious that these basic realities have taken on appearances in present-day thinking which demand a reconsideration, if not a revision, of the concept. The origin of the concept is in the recognition of distinctive features as they occur in the activity of the natural processes; but to extend the concept beyond this existential activity on the tacit assumption that its extension is supported by the same existential value as its origin, is, it seems to me, a highly questionable proccedure. We are here confronted with the necessity of distinguishing between the *concept* of time and that which I for the purpose of this distinction shall call *time itself*.

By "time itself" I mean the metaphysical reality of time, that is, its existential structure. The natural processes are characterized by activity and direction. The present has been defined above in terms of activity; it is the featuring of distinct and distinguishable characters which mark the advance of the processes. "Time itself" is the direction taken by these activities; it involves the durational relation which obtains between the distinct features in the active processes. That is, the nature of time is found in the direction of nature's processional activities; or, differently stated, time is the natural processes in their direction. Time and nature's processes are not two metaphysical existences; on the contrary, the direction of the activities of the natural processes is that which intelligence calls time. The reality of time, then, is as actual as the reality of the natural processes in their direction; but the structural activity and direction which constitutes "time itself" does not admit into its constitution the past or the future. This inclusion has been effected by the *concept* of time, an inferential extension of present reality beyond its actuality.

The metaphysical reality of time, then, is the metaphysical reality of the direction of the natural processes. The formulation of an idea,

the growing of a plant, the deposition of sediment in the river's bed, the flight of the comet across the sky, are instances of the natural processes whose directions constitute the reality of time. The staging of these activities is that which we identify as the present, while their direction is "time itself." Now, any present stage of an action may imply one or more of its previous stages; but this implication can not safely be equated with metaphysical reality as long as the positive grounds for such reality do not seem to be in evidence. The so-called earlier stages of an activity do not belong to metaphysical reality, as here understood, and, but for our inferential constructions, we could not even think them because of their absence from the active process. The completion of an activity also marks its extinction; as extinct it has lost its metaphysical reality. In terms of the reference system—the completion of the activity renders it inaccessible as a functioning factor of a metaphysical system in which the structural characteristics of actual existence is requisite to reality, where these characteristics are found in activity and direction. To say that the completed activities of the earlier stages are past, is, from this viewpoint, tantamount to the declaration that they are not a part of metaphysical reality.

II

We now turn to the epistemological aspect of the problem of the past. It is this which Mead sought to stress, and to which he devoted a minor part of the first and the major part of the third Carus Lecture. In the latter he delineated the biological background of the cognitive structure of the past. A rapid review of these analyses may be phrased somewhat as follows.

At the lowest level of life the organic form selected "its appropriate stimuli" in accordance with its needs; this selection was due to certain sensitivities. The primary and mechanical activity of this low level advanced into a higher stage, when the animal began to react to its own organic processes, whereby its organism began to become a "part of the world within which it lives"; this was the level at which consciousness appeared. The further advance into a third stage came with the development of a neural mechanism of the "important distance centers"; at this point delayed responses began to appear as the organism instituted control of its activities. This stage was the field within which ideation arose; there was a "separation in the experience" of the organism between the content of the distance stimulation and the immediate response to it. Distance stimulation was identified with distance experience, and we had the rise of the perceptual object, that is, the object about which we could conjecture, in Mead's own words, "what we can do to it or with it or by way of it, or what it can do to us." Imagery developed when the

organism, in responding to an object, also responded to tendencies and results of previous responses. Ideation was further developed into universals, when the organism evolved attitudes which selected "characters of things" by detaching them from the situations within which these objects originally belonged.

Mead now completed this analytical perspective. Ideas are in the present; but they "refer beyond themselves," and in this reference beyond the immediate present of the organism the things referred to are given characters with the value of the things themselves. Thus the outcome is that the life processes produce organisms so constituted that they reach out beyond themselves; these organisms seem to require a larger environment, and they satisfy this requirement by reaching beyond their own immediacy into spatial and temporal extensions which are built up and adorned by characters found in their own immediate present. Accordingly, the historian is seen to revise his account in order to correct errors in previous accounts; the historical past is in constant process of revision. The physical scientist is engaged in "finding rational order and stretching it back, that he may previse the future"; but this rational order meets with constant modification as necessitated by the success or failure of current hypotheses. In the case of memory we have an instrumentality for that specific orientation which is the demand of the individual present. Thus, to the "minded organism" the past is the satisfaction of the demand for complete rationality; the organism requires the constant extension of its horizons; it makes this extension; and this "larger environment" takes the form of a cognitive structure, in which a complete rationality is projected as the background of the present.

Leaving Mead's account, the matter may be stated in terms of the reference system, as already suggested above.

The situation of consciousness is the field in which the individual, by means of intelligence, becomes identified with the on-going processes. By intelligence is meant, simply, the ability of organic adjustment with a view to better orientation. Intelligence is a phase of organic activity; it is organic activity developed to the point of a peculiar ability to make adjustments. These adjustments are effected by means of environmental characters, such as sense data, and the constructs which result from them, such as images and ideas. The characters are objectifications of this organic activity, and the constructs are the tendencies to reproduce these characters in a subsequent similar activity. Intelligence, then, is the distinguishing mark of the situation of consciousness, and this situation is definitely a behavior or activity situation.

Intelligence exhibits the ability to construct references and reference systems, which extend beyond the immediacy of the existing situation of the organism. An immediate organic situation with its

environmental characters is also productive of the constructs of intelligence. The environmental characters are, of course, the fundamental features of the situation; the constructs are, in a sense, the additional elements furnished by the organism, which elements may either shadow the characters, as found in any familiar percept, or be a separate objectification thrown off by the characters, such as a memory-object or as a so-called picture produced by literary skill. Whatever the particular construct of intelligence may be, it always seems to contain a reference to something other than itself.

Intelligence being that peculiarly developed organic activity by which the individual becomes identified with the on-going processes, it affirms the object of this reference of another and not-present stage of these same processes. The individual is identified as being within that same larger totality of actions and patterns, within which also the implicit reference of the construct belongs. The object of the reference, however, is inaccessible, as its locus is relegated to an earlier stage in the process. What remains is the symbol of the allegedly original object; this symbol is a construct which becomes blended with similar constructs as the processes advance, with the result that its exact original lines tend to blur and even to disappear. But the validity of the modified construct is established by its functioning stability in the present organic situation.

The situation of consciousness, then, involves an extended continuity of processes, with which intelligence identifies itself. As such it exhibits itself as the field of orientation. Intelligence environs the immediate situation with a larger system; and this system extends beyond the metaphysical present. The reality of this system is determined by its ability to furnish a background for present activity and a schema of existence which will satisfy intelligence. It is a reference system of which the organic activities of the natural processes are the pivotal factor.

Such a reference system is the past, which portrays an order, or orders, leading up to the pivotal factor. The pastness of any item is established by its relation to or incorporation in the system in question. The reality of any system must be found in its pivotal factor, and the reality of the past must have this pivotal factor as its corner-stone. If the system, or factors within it, fail to fit, or function with, the pivotal factor, the system, or the factors, as the case may be, is said to be "unreal." The epistemological reality of the past, then, is not found in a reproduction of situations which are alleged to have had existence; for such reproduction is impossible. Its reality is found in the reference system which is symbolic of earlier situations in the processes which are still going on, and which reference system is in functional continuity with the present organic activity.

It is this very simple distinction between the metaphysical and the epistemological aspects of the problem of the past which seems to me important to bear in mind in future discussions of the problem. The recognition of this distinction will cause hesitancy in accepting such statements as that of Laird, that memory is "the mind's awareness of past things themselves;" or such as that of Alexander that the past object somehow can become "attached to or appropriated by myself." Such expressions seem to carry the implication that the past, that which supposedly happened in or belonged to earlier stages of the processes, is a metaphysical reality accessible to present activity. From the viewpoint here presented this is an error. The earlier stages of the processes are not accessible to present activity or investigation; they are not something which we can reach. The only past with which we appear to be conversant is our cognitive structures, which I have called epistemological reference systems. Epistemological reference systems are of various kinds, but they all are in the present; and we call some of them "the past" in order to distinguish their function from that of other systems, such as, for example, the future.

There is in Mead's position no denial of the reality of time by drawing the world into a non-temporal ideality; his concepts of passage, emergence, and the processional activity of nature safeguard time. There is, however, an explicit denial of a past as a metaphysical entity independent of the present. Any given past is the past *of* a definite present. This past arises with the activity-form of its present. The quantitative determination of the present is as yet inadequate, for developments emerge which can not be, and could not have been, predicted. The earlier stages in the processes leading up to the present can not, therefore, be regarded as the past of these new emergents of the space-time-energy compound. What *is* the past, on the contrary, is that cognitive structure or system which this present extends back of itself to account for its own peculiarity and emergent character. This is that revisable past, which—yesterday, today, and for ever more—*never* remains the same.

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BOOK REVIEWS

The Nature of Physical Theory: A Study in the Theory of Knowledge. VICTOR F. LENZEN. New York: John Wiley & Sons, Inc. London: Chapman & Hall, Ltd. 1931. xii + 301 pp.

Professor Lenzen has the distinction of having had specialized training in both physics and philosophy, and is thus unusually fitted

to write a book on this subject. In the present work it was partly his purpose "to provide philosophical students of science with a rigorous systematic exposition of physical theory," and consequently he has "used a minimum of mathematics." At the same time he has "developed the subject with sufficient detail so that the book will be useful also to physicists who are interested in methodology and systematic construction. The book thus stands between the popular expositions of physics and the detailed treatises for experts" (*Preface*).

In this review it is manifestly impossible to go into any mathematical details. Of course a knowledge of the calculus and of differential equations is necessary for following Lenzen's exposition in detail; and when he comes to deal with the general theory of relativity and with quantum theory, the reader has to have an elementary knowledge of tensor analysis and of matrix mechanics. That Lenzen makes this demand upon his reader is not his fault. We have reached a stage where the student of the philosophy of science must equip himself with knowledge of at least the elements of a number of mathematical disciplines. I shall touch only those parts of his book that any intelligent reader can understand.

First, what is " a physical thing"? "A fundamental property of a thing is that it has **aspects.** If I look at a book upon the table I experience in sensation a partial aspect of the book. A thing presents different aspects from different points of view. We can describe an aspect by saying that it is colored, that it has a certain shape, that it is smooth, etc. Knowledge of a thing is ultimately based upon acquaintance with aspects of the thing. However, the concept of thing implies more than the concept of given aspects; there are also possible aspects. Thus while I am merely seeing the book some visible aspect is given, whereas the tangible aspects are merely possible. Hence a thing may be characterized as an entity which has given and possible aspects. . . . An aspect is a union of particular qualities, complexities and relationships" (pp. 15–16). "A physical body is a class of aspects which are or can be given to some mind." "The problem of physics is the description of the characters and relations of aspects which may be represented by numbers." "The objectivity of the physical order in grounded in correlations between aspects given to different minds" (p. 6).

From this it appears that "an important relation to which aspects may be terms is the relation of objects to subject. The discussion of this specific very pervasive relationship raises the problem of the status of aspects with respect to their dependence on, or independence of, being given to some mind. . . . I do not wish, however, to discuss this question in the present book; it appears to me that it is possible

to construct science without answering, or even raising, the metaphysical problem. I have endeavored to use the term aspect without giving it a subjectivistic or realistic interpretation. . . . We can describe given and possible aspects, or elements, without considering the problem of their subjectivity or independent reality. The systematic description and correlation of aspects of reality is the problem of science.

"Now the reference to the metaphysical problem has provided us with additional concepts for the expression of the criterion of physical reality. The fundamental principle is that in the construction of a physical theory one employs a subjectivistic criterion of reality and assumes a realistic attitude. A thing is real because it is an object of possible experience; yet one describes it as if it were independent of experience, although it may be dependent upon experience for its reality. On account of these apparently contradictory factors it is difficult to expound the theory of aspects without making it appear that one is either a subjectivist or a realist. I do not wish to base physical science upon subjectivism or realism because in my view a theory of aspects is merely preliminary to the metaphysical problem; a metaphysical subjectivism or realism can be superposed upon physical science" (pp. 4–5).

One of the great merits of the book is that it recognizes that there is a metaphysical problem and yet successfully presents physical theory as impartial with regard to the solution of this problem. The secret of this success is found in the fact that according to Lenzen physics deals with measure-numbers.

Physics is a science whose progress takes place by three stages. First there is experimental physics, whose business it is to measure distances between space-time coincidences; its "results are sets of assignments of numbers to descriptive functions." Next comes theoretical physics, which takes these results and from them discovers "functional relations between the variables the values of which are the numbers." Last comes mathematical physics, which studies the "implications between these functional relations and others" (p. 40). Thus the whole task of physics consists in securing numbers by measurement and in discovering the mathematical relations between these numbers and also the mathematical implications of the discovered relations. What is measured is something found in experience: this, I take it, is what Lenzen means in saying that "in the construction of a physical theory one employs a subjectivistic criterion." What is discovered besides the measure-numbers thus obtained is a vast array of mathematical relations between these numbers. The assumption that these mathematical relations point to something not numbers is what I take him to mean when he says that the physicist

"assumes a realistic attitude." How that something is to be conceived is what I take to be "the metaphysical problem" that "can be superposed upon physical science."

A basic feature of the book is its emphasis on the method of successive approximation resulting in "successive description." "All qualities are relative, for example, the redness of a thing is functionally related to other properties. Similarly, the physical quantities which are assigned to physical objects depend upon accompanying conditions. The definition of a fundamental quantity, therefore, must proceed by successive approximation. We first define a quantity, that is, we describe a method of assigning a number to a property, upon the assumption that conditions as estimated qualitatively are invariable. Then we discover laws correlating the physical quantity and qualities. The laws thus enable us to define quantitatively to the first approximation the conditions under which the quantity is defined to the second approximation. For example, we may define the length of a body as the number obtained by an operation with a standard rod whose qualitative temperature is that of ordinary conditions on the earth. One then discovers a correlation between the length of a rod and its hotness or coldness. We may then define a scale of temperature in terms of the variations in length of some standard rod. This enables us to define quantitatively the conditions of temperature under which the standard of length is defined to the second approximation.

"Now in the development of a system of physical theory the definition of the fundamental quantities undergoes a change. The fundamental quantities are first defined independently, then laws are discovered which can be transformed into implicit definitions of the quantities. . . . The temperature of a body was first defined in terms of a thermometer. . . . Then the second law of thermodynamics was discovered and can be transformed into a definition of temperature. Thus in the construction of a physical theory there is a union of definition and experimental law. In order to improve the synthetic unity of a theory one is led to change the fundamental definitions so that experimental laws are transformed into definitions and definitions give rise to experimental facts. Fundamental and derived quantities may thereby change places. The ultimate goal of physical theory is the implicit definition of all fundamental quantities by a set of postulates" (pp. 46–47).

There is an interesting section (pp. 42–45) devoted to the question of the origin of physical concepts. The concepts of sense qualities and of space-time coincidence are "abstractions from experience." "The assignment of numbers by the operation of measurement seems to be a process of invention. However, once the standard or co-

ordinate system has been selected the assignment of the number is by the observation of coincidences. The concept of a relation between a number and an object is defined by an experiment and is abstracted from experience in a secondary sense. . . . Concepts play a double rôle. Those concepts which have been abstracted from experience are descriptive of previous experience; they serve as principles of order for future experience. Such concepts are *a posteriori* in their origin and *a priori* with respect to the interpretation of future experience."

One will find in the book a treatment of all the important concepts of the classical, the electrodynamic, and the geometrical types of physical theory. From the nature of the case the discussion of these concepts is mathematical. The last two chapters are devoted to the concepts of substance and causality. Unfortunately space does not allow me to take up these matters.

Taken all in all, this excellent book supplies a need of the philosopher who has some mathematical equipment, the need of a conspectus of the methods and the accomplishments of physics. It is refreshing, after having been bombarded of late with popular—devilishly popular—accounts of the nature of the physical world, to be led by a physicist to understand the nature of physical theory. After all, the nature of the world of the modern physicist ought to be defined by the nature of the theory by which he discovers that world. Speaking only for the philosopher—of course I can not speak for the physicist—this book with its mathematical approach deserves to be studied along with Bridgman's *The Logic of Modern Physics* with its experimentally operational approach to the philosophy of physics. Until the philosopher combines the results of these two approaches to modern physics, he is not in a position to avail himself of modern physics in his metaphysical speculations.

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Philosophy of the Sciences: the Tarner Lectures for 1931–1932. F. R. TENNANT. Cambridge: The University Press. 1932. ix + 191 pp.

It is a surprise to find such a book as this issuing from Cambridge. One has come to think of Cambridge as the home of a special way of thinking on philosophic matters, a way in which logico-mathematical analysis and attempts at rigorous demonstration are conspicuous, and psychology and the historical method play little part. Dr. Tennant abjures this way from the beginning. He makes psychology the fundamental science, contends that even the theory of knowledge must adopt the historical method, regards logistic as on the whole a

sterile exercise, and denies that certainty is to be had anywhere. One would like to know the feelings with which Cambridge listened to its newest Tarner lecturer.

Dr. Tennant's conclusions will be clearer from a résumé of his argument. The chief task of a philosophy of the sciences, he thinks, is to distinguish the kinds of knowledge the various sciences are pursuing, and to range these kinds in an order that will make plain their relations and comparative worth. Is there any science that can do this for itself and all the others? Yes, there is one; and that science is psychology. For it is psychology that by its analysis discloses the elements we have put together in our supposed knowledge, and by its genetic study shows why we have accepted one arrangement of them as giving knowledge rather than another. For example, it takes the two kinds of knowledge that pass as surest, the perception of what is given in sense and the perception of the self-evident, and shows that neither of these can be accepted at face value. For sense-perception, if taken at a level where only sensation enters in, gives nothing that could be true or false; and if taken higher, it is full of interpolations that have been read into it by the mind. These can be exposed for what they are only by the psychologist. Nor does the other kind of certainty come out better from his scrutiny. For the flash of insight in which we grasp a self-evident connection may be, and commonly is, nothing but an association that is highly familiar, or a chain of reasoning with some parts telescoped, or something else that is merely masquerading as certainty, and whose mask the psychologist alone is in a position to tear off. Psychology is thus the science of the sciences, in the sense that it alone can serve as critic of its own presuppositions and of what other sciences accept as knowledge.

But by "fundamental," Dr. Tennant points out, we may mean something else. We may mean by the fundamental science one that provides raw material for the others to work on. And in this sense it is history that is fundamental. For all knowledge in the last resort comes from that flux of personal experience which in its wholeness belongs to history alone. If we take history, then, as the soil of the other sciences, how are we to account for its having produced so various a crop?

There are two ways in which its relation to the other sciences may be described. First, these may be arranged in order of remoteness from their concrete base. Thus biology leaves out less of this base than does chemistry, chemistry less than physics, physics less than mathematics, and this again less than logic. Or, secondly, they may be classified by the sort of explanation they aim at. Logic, since it leaves out all but the identities and differences of things, seems

to have arrived at the purest and clearest form of intelligibility. In the other sciences this purity is more and more muddied. Physics, since it deals with a body's motion, must introduce into its explanations the idea of substance; other sciences, and perhaps physics too, must introduce causality; biology goes farther and requires the idea of final causes. Thus we have two modes of classifying the sciences; and it will be observed that the order we get from them is the same. Certainly most scientists would not find in this any coincidence. They would say that abstractness and intelligibility go together, and that the sort of grasp achieved in logic and mathematics is the best knowledge we can hope for.

This Dr. Tennant denies. He seems to be moved to this denial by three considerations. First, he thinks it absurd to say that the real world is indefinitely rich and various and that the aim of science is to know this world, yet the highest kind of knowledge is that which tells us least about it. Secondly, he is inclined to think that logic and mathematics are not knowledge at all. They provide a set of rules for what we may call the game of thinking, but there is no guarantee that these hold beyond the game itself. Thirdly, their purity is largely mythical. One after another, the Kantian categories have turned out under psychological scrutiny to be only "habits of thinking that have proved useful *ad hoc*." Logic, he believes, either reduces to tautology, "as one eminent logistician affirms to be the case," or else it must make "the appeal to experience which a pure science forswears." If this appeal is admitted, as Dr. Tennant thinks it must be, then the whole of knowledge will be revealed as of one piece. It will be an attempt, in different provinces, to place upon sense-data a construction that works. That is all the knowledge we can hope for, since "between science and the world stands human nature." The fundamental categories of all kinds of explanation are drawn from the nature and situation of the mind that knows; the idea of substance is suggested by the permanence of our own body; the idea of causation comes from the experience of will; Occam's razor from our desire for simplicity and ease. The vision of the world as an embodiment of reason through and through is thus an idle dream, not only because the flux of sensation from which we start can never be distilled away into concepts, but also because knowledge is a projected shadow of ourselves and a "pragmatically verified interpretation is the nearest approach" to the world outside us.

Dr. Tennant is an eminent theologian, and he devotes his final lecture to the place of theology among the sciences. He not only gives it a place unhesitatingly; he regards it as the culmination of the whole scientific enterprise. He is quite ready to admit that in

theology we are reading ourselves into the world, but his answer is in effect: What of it? Does not all science do the same? The only important difference between theology and the other sciences is that, as the mass of facts to be considered is so much greater, the certainty of its conclusions must be less. If we remember, however, that at best probability is the guide of life, its enterprise will appear neither illegitimate nor hopeless.

A book so courageously and carefully reasoned, and so willing to fight its battles on ultimate grounds is worthy of deep attention. Yet while admiring greatly the knowledge and skill with which the argument is handled, I remain unconvinced that its main positions have been made out. There is no space to discuss these in detail; I shall only indicate some of the points at which the case seems vulnerable.

1. I can not think Dr. Tennant succeeds in his attempt to make genetic psychology the final authority in knowledge. What justifies our believing something can not lie, in the last resort, in our perception of how we came to believe it. For if it did, this perception itself could be justified only by another perception in which we saw how we came to perceive *that*, and so on without end. Dr. Tennant believes that the genetic method has undercut this dialectic, but I do not think such simple straightforward logic can be argued away. In attempting to validate its own manner of explaining, the genetic method must itself assume as valid certain principles of explanation; if it does not assume them, it can not get under way; if it does assume them, it is circular. Of course to say this is not to deny that the method may be immensely helpful as a means of clearing one's vision.

2. I do not think Dr. Tennant is right, or even quite consistent, in saying that the principles of logic and mathematics are "thought but not knowledge." These principles are admittedly got from experience by abstraction; likenesses and differences are admitted to be "thrust upon us with a necessitation similar to that which marks sensation." Hence they would seem to supply knowledge of fact if any abstractions do, and it is hard to see why they should be set down as giving only "knowledge about the relations of ideas."

3. Dr. Tennant nowhere makes clear what he conceives knowledge to be. He is not a pragmatist; he does not believe that self-evidence reveals the structure of things; he does not accept direct apprehension, and does not believe that knowledge copies. His notion is conveyed in such phrases as that there is "relevance rather than identity or copying" between thought and its object, that knowledge is a "sympathetic *rapport*" with things, and that our constructions form "some version or function of the real." This is very dark

indeed. It may be replied that if this very darkness is what the theory is insisting on, it can not be retorted upon it as an accusation. But then one's difficulty is this, that when the darkness is so deep, the claim to see light is hardly justified. If knowledge of the outer world is as precarious as Dr. Tennant suggests, how can we know it is even relevant? How can we know that such a world is there at all?

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ARCHIVIO DI FILOSOFIA. Anno II, Fasc. II. In tema di Filosofia Cattolica: *M. Blondel.* Chiesa e Stato: *B. Varisco.* Matematica e Filosofia: *F. Orestano.* Verso un nuovo relativismo: *A. Pastore.* La negazione della filosofia nell' idealismo attuale: *G. Fano.* Il fondamento logico della tesi pluralistica: *R. Pavese.* Il problema filosofico dell' amore nell' Opera di L. Ebreo: *G. Fontanesi.*

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NOTES AND NEWS

We regret to announce the death of Dr. June E. Downey, Professor of Psychology at the University of Wyoming, on October 11, at Trenton, N. J. Professor Downey was borne in Laramie, Wyoming, June 13, 1875. She did her undergraduate work at the University of Wyoming, and received the degrees of A.M. and Ph.D. from the University of Chicago. She began teaching at the University of Wyoming in 1898, and in 1915 she was made head of the Department of Philosophy and Psychology. She contributed to scientific periodicals and among her books are the following: *The Will Temperament and Its Testing; The Kingdom of Mind; Creative Imagination.*

Under the general direction of the Società Filosofica Italiana, a new quarterly has appeared under the title, *Archivio di Storia della Filosofia.* The editor is Professor G. Perticone, (address, Via Ulpiano 20, Rome). The aim of the Archives is not only to publish the contributions of Italian scholars to the reinterpretation of the history of modern philosophy, but to make special studies of philosophical movements in other countries. The broad scope and distinguished character of the Archives is evident in the following contents of the first number: L'infinito cosmico e la meccanica celeste di Newton: *G. Tarozzi.* Caratteri e tendenze dell' idealismo in Inghilterra e in Italia: *N. Abbagnano.* Sulla teorie giuridica di B. Croce: *A. Poggi.* Problemi dell'odierna filosofia del Dirritto. Note e Commenti: *G. Perticone.* Note sulla cultura scandinava: *G. Bach.* Orientamenti della filosofia morale anglo-americana: *A. Ferro.* Recensioni e Notizie.